

ORIGINAL

cingular<sup>SM</sup>  
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FEDERAL COMMUNICATIONS COMMISSION  
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July 12, 2001

Ms. Magalie Roman Salas  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW, Room TW-A325  
Washington, DC 20554

RE: Cingular Wireless LLC Request for Waiver of Sections 20.18(e)-(h) of the  
Commission's Rules, CC Docket No. 94-102; DA 98-2631

Dear Ms. Salas:

This is to inform you that on July 11, 2001, Ben Almond and Jim Bugel of Cingular Wireless met with Adam Krinsky, Senior Legal Advisor in Commissioner Gloria Tristani's office to discuss issues related to the above referenced subject.

The attached document was used for discussion purposes. Please associate this notification and accompanying material with the referenced proceedings.

If there are any questions concerning this matter, please contact the undersigned.

Sincerely,



Ben G. Almond  
Vice President-Federal Regulatory Affairs

Attachment

Cc: Adam Krinsky

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**Cingular Wireless  
CC Docket 94-102  
E-911, Phase II Deployment, Waiver Petition**

Cingular seeks a waiver to deploy Phase II location technologies:

- (1) Enhanced Observed Time Difference (E-OTD) – GSM markets
- (2) Switch-based location technology – TDMA markets

**E-OTD**

- E-OTD is currently the only viable solution for GSM air interface.
- A-GPS handsets will not be timely available.
- Other GSM carriers will likely deploy E-OTD which facilitates roaming.
- Network-based solutions not available.
- E-OTD accuracy capability:
  - 100 meters/67% calls
  - 300 meters/95% calls
- FCC handset accuracy requirement is:
  - 50 meters/67% calls
  - 150 meters/95% calls
- E-OTD vendors appear committed to continue software refinements for accuracy improvements.

## **Cingular Wireless**

Cingular's E-OTD handset deployment – new subscribers:

- One entry-level handset model will be available by October 1, 2001;
- 25% of all handsets sold by December 31, 2001;
- 40% of all handsets sold by March 31, 2002;
- 65% of all handsets sold by June 30, 2002;
- 100% of all handsets sold by September 30, 2002.

These activation rates exceed the FCC's handset activation requirements.

Cingular will deploy "safety net" solution for embedded GSM base.

"Safety Net" deployment schedule:

- 1<sup>st</sup> quarter 2002 (start)
- 2<sup>nd</sup> quarter 2002 (completion)

Radial Accuracy:

- 1000 meters/67% calls

E-OTD solution requires switch software/hardware upgrades. Switch upgrade deployment schedule:

Ericsson switches --

- 1<sup>st</sup> quarter 2002 (start)
- 12/2002 (completion)

Nortel switches --

- 5/2002 (start)
- 12/2002 (completion)

## Cingular Wireless

Cingular applied similar cost/benefit approach to decide location technology choice for its TDMA markets.

- I. Handset-based solution not available for TDMA
- II. Extensive Field Trial Analysis – TDMA

Network-based solutions:

TDOA

TDOA/AOA

RF Mapping

Tests conducted in various indoor/outdoor environments, various urban, suburban and rural type environments:

- Urban canyons
- Car, stationary
- Car in motion
- Parking garages
- Grocery stores
- Parks
- Beneath dense foliage
- Open fields

## **Cingular Wireless**

### **Network-based Solutions – Not Feasible**

- Do not meet accuracy requirements
- Long deployment schedule for LMUs, antennas...
- Unreasonable costs

### **Out of all location technologies tested**

- Best 67% accuracy – 76m, handset-based solution
- Other technologies: 67% accuracy -- 127 to 256m range  
95% accuracy – 1200m or greater

**Cingular concluded that based on analysis of field trial data, no location technology meets the FCC's accuracy mandate for all environments tested.**

## **Cingular Wireless**

### **Switch-based location technology**

- Signal strength measurements from serving cell and neighboring cells.
- Network provides measurements for software algorithm to compare with database of real world signal strength measurements and determine location of handset.

### **Major Advantages of Switch-based location technology --**

#### **Speed of deployment and cost**

#### **Location accuracy will improve due to vendor software refinements**

### **Deployment Schedule**

- Secure vendor for algorithm solution
- Upon waiver grant, database development, real-world signal strength measurements
- June 30, 2002, 100 percent of Cingular's coverage area served by an Ericsson switch or within 6 months of PSAP request, whichever is later; and
- February 28, 2003, 100 percent of Cingular's coverage area served by all other switches (Lucent and Nortel), or within 6 months of a PSAP request, whichever is later.

Deployment Schedule shown above is dependent upon the required switch software upgrades which are necessary to interface with vendor equipment providing algorithm solution.